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Reported Fire Losses In The Petroleum Industry For 1986

OCTOBER 1987

American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Reported Fire Losses In The Petroleum Industry For 1986

Safety and Fire Protection Department

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Institute

REPORTED FIRE LOSSES IN

THE PETROLEUM INDUSTRY - 1986

The experience record of 49 companies reporting to the 56th annual fire loss survey to the American Petroleum Institute indicates a ratio of fire losses to current replacement value in 1986 of 3.6 cents per $100. A current replacement value of $151,505,124,000 was reported for structures, equipment, contents and oil stocks in 1986.

Fire losses of $ 55,147,910 were reported for the year. The number of fires reported for 1986 totaled 285.

TABLE 1

CURRENT REPLACEMENT VALUES,
FIRE LOSSES, AND FIRE-LOSS RATIOS,
BY CLASSES OF PROPERTY FOR 1986

Classes of Property	Current Replacement Value $	Fire Loss $	Fire Loss Ratio $/$100
Exploration, Prod. & Drilling	43,818,020,000	4,127,000	0.009
Gas Processing	3,043,000,000	1,978,310	0.065
Exp,Prod,Drill, & Gas Not Sep[1]	39,744,300,000	5,180,900	0.013
Subtotal[2]	86,605,320,000	11,286,210	0.013
Offshore Portion	914,000,000	21,000	0.002
Petrochemicals	8,546,600,000	4,069,000	0.048
Refining	31,359,350,000	36,835,800	0.117
Marketing Wholesale	5,465,500,000	1,779,000	0.033
Marketing Retail	3,764,600,000	371,400	0.010
Marketing Subtotal[3]	9,230,100,000	2,150,400	0.023
Pipeline	12,155,954,000	294,500	0.002
All Others	3,607,800,000	512,000	0.014
All Properties	151,505,124,000	55,147,910	0.036

[1]Expl., Prod., Drilling & Gas unable to be separated into Expl., Prod. & Drilling or Gas Processing functions
[2]Total of Expl., Prod., Drilling (Separated & Not Separated), and Gas Processing
[3]Total of all Marketing functions

NOTES: The reporting of fires for 1986 was restricted to those resulting in losses of $2,500 or more.

The Offshore Portion is not included in the totals.

A list of the companies participating in the survey for 1986 appears on page 4.

TABLE 2

NUMBER OF FIRES REPORTED FOR 1986

Classes of Property	Year	Originating on Oil Company Properties: Confined to Property	Originating on Oil Company Properties: Spread to Other Property	Originated Outside But Spread to Oil-Company Property	No. $2.5K to $100K Loss	No. $100K to $1M Loss	No. over $1M Loss	Total Number of Fires
Exploration, Prod. & Drilling	1985	107	0	1	98	9	1	108
	1986	92	2	0	70	24	0	94
Gas Processing	1985	19	0	0	14	3	2	19
	1986	24	0	0	19	5	0	24
Exp,Prod,Drill, & Gas Not Sep[1]	1985	0	0	0	0	0	0	0
	1986	110	2	0	86	26	0	112
Subtotal[2]	1985	126	0	1	112	12	3	127
	1986	116	2	0	89	29	0	118
Offshore Portion	1985	6	0	0	4	2	0	6
	1986	1	0	0	1	0	0	1
Petrochemicals	1985	20	0	0	19	1	0	20
	1986	16	0	0	8	7	1	16
Refining	1985	104	0	0	65	32	7	104
	1986	106	0	0	69	28	9	106
Marketing Wholesale	1985	2	0	1	3	0	0	3
	1986	12	0	1	10	3	0	13
Marketing Retail	1985	32	0	0	32	0	0	32
	1986	20	0	0	20	0	0	20
Mark. Sub.[3]	1985	34	0	1	35	0	0	35
	1986	12	0	1	10	3	0	13
Pipeline	1985	15	0	0	11	4	0	15
	1986	6	0	0	4	2	0	6
All Others	1985	13	0	0	8	4	1	13
	1986	5	0	0	4	1	0	5
All Properties	1985	312	0	2	250	53	11	314
	1986	282	2	1	205	70	10	285

[1]Expl., Prod., Drilling & Gas unable to be separated into Expl., Prod. & Drilling or Gas Processing functions
[2]Total of Expl., Prod., Drilling (Separated & Not Separated), and Gas Proccessing
[3]Total of all Marketing functions

NOTE: The reporting of fires for 1986 was restricted to those resulting in losses of $2,500 or more.

The Offshore Portion is not included in the totals.

TANK FIRE EXPERIENCE IN 1986

9 companies responded to a questionnaire on fires originating in tanks, resulting in losses of $2,500 or more per fire. Reports on such fires in 1986 are summarized in Table 3. A total of 35 fires in this category were reported for 1986. These fires involved 35 tanks.

Of the tanks affected in 1986, 31 stored crude oil.

By type of tank involved in fires, 14 had cone roofs, and 13 were of the dome roof type.

Of a total of 35 tanks involved, 29 were located on producing properties, 2 at refineries, 1 in pipeline operations, and 1 at bulk plants and terminals.

TABLE 3

TANK FIRE EXPERIENCE IN 1986 and 1985

Fires Originating in Tanks Resulting in Losses of $2,500 or More

Number of Tanks Involved in Fires

Structural Type of Tank

	Floating Roof																			
	Pantograph Seal		Tube Seal		Internal		Total		Cone Roof		Dome Roof		Sphere & Spheroid		Horozontal		Other Types		Total	
	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985	1986	1985
By Class of Product:																				
Crude Oil	2	2	2	1	2	0	6	3	13	22	11	3	0	0	1	0	0	0	31	28
Products:																				
Under 100 F Flash	0	1	0	1	0	0	0	2	0	0	0	1	0	0	0	0	1	0	1	3
100-200 F Flash	0	0	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	1	0	6
Over 200 F Flash	0	0	0	1	0	0	0	1	1	0	2	0	0	0	0	0	0	0	3	1
LNG/LPG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	3	2	3	2	0	6	6	14	25	13	6	0	0	1	0	1	1	35	38
By Location:																				
Producing Properties	2	0	2	0	2	0	6	0	12	24	10	4	0	0	0	0	1	0	29	28
Pipeline Operations	0	2	0	0	0	0	0	2	1	0	0	2	0	0	0	0	0	1	1	5
Refineries	0	1	0	2	0	0	0	3	1	1	1	0	0	0	0	0	0	0	2	4
Bulk Plants & Term.	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1
Other Locations	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
Total	2	3	2	3	2	0	6	6	14	25	13	6	0	0	1	0	1	1	35	38

Total Number of Fires Involving Tanks (regardless of number of tanks involved)	35	34

REPORTED FIRE LOSSES IN THE PETROLEUM INDUSTRY
COMPANIES PARTICIPATING IN THE 1986 SURVEY

1. ALABAMA-TENN NATURAL GAS CO
2. AMOCO OIL CORPORATION
3. ANCHOR GASOLINE CORPORATION
4. ARCADIA REFINING COMPANY
5. ARGO PETROLEUM COMPANY
6. ASAMERA OIL (U.S.) INC.
7. ASHLAND OIL, INC.
8. BHP PETROLEUM (A)
9. BP NORTH AMERICA PETROLEUM INC.
10. CADDO PINE ISLAND CORP
11. CALCASIEU REFINING COMPANY
12. CELERON OIL & GAS COMPANY
13. CHAMPLIN PETROLEUM COMPANY
14. CHASE TRANSPORTATION COMPANY
15. CHEVRON U.S.A. INC
16. CIBRO PETROLEUM PRODUCTS, INC.
17. CITIES SERVICE OIL & GAS CORP.
18. COASTAL OIL COMPANY
19. COLUMBIA GAS TRANSMISSION CORP
20. CONOCO INC.
21. COOK INLET PIPE LINE COMPANY
22. CROSS OIL & REFINING
23. CSX OIL & GAS CORP
24. DAYLIGHT ENGINEERING CO.
25. DERBY REFINING COMPANY
26. E. E. FOGELSON
27. EL PASO NATURAL GAS COMPANY
28. EXPLORER PIPELINE COMPANY
29. EXXON CHEMICAL AMERICAS
30. EXXON COMPANY, U.S.A.
31. FINA OIL & CHEMICAL CO.
32. FLYING J. PETROLEUM CO.
33. HELLMAN PROPERTIES
34. HEWIT & DOUGHERTY
35. J. S. ABERCOMBIE MINERAL CO. INC.
36. KANEB PIPE LINE COMPANY
37. K. N. ENERGY INC.
38. KOCH REFINING COMPANY
39. LAKEHEAD PIPE LINE COMPANY, INC.
40. LAKESIDE REFINING CO.
41. LARIO OIL & GAS CO.
42. LION OIL COMPANY
43. LONE STAR GAS COMPANY
44. MAPCO PETROLEUM INC.
45. MOBIL OIL CORPORATION
46. MOBIL RESEARCH & DEVELOPMENT CO.
47. MURPHY OIL USA, INC.
48. OHIO OIL GATHERING CORPORATION

49. PEOPLES NATURAL GAS CO.
50. PETROLANE LOMITA GASOLINE CO.
51. PLANTATION PIPE LINE COMPANY
52. PORTAL PIPE LINE CORPORATION
53. PORTLAND PIPE LINE CORPORATION
54. PRIDE REFINING, INC.
55. PRODUCERS GAS EQUITIES, INC.
56. SANTA FE ENERGY COMPANY
57. SERGEANT OIL & GAS INC.
58. SOUTH HAMPTON REFINING CO.
59. SOUTHLAND OIL COMPANY
60. SOUTHWEST PIPE LINE
61. SUN COMPANY, INC.
62. TENNECO OIL COMPANY
63. TEXACO INC.
64. THRIFTWAY CO. INC.
65. TOTAL PETROLEUM INC.
66. UNION GAS SYSTEM, INC.
67. UNION OIL CO. OF CALIFORNIA
68. UNITED REFINING CO.
69. VALERO ENERGY CORPORATION
70. WESTERN GAS PROCESSORS, LTD.
71. WITCO CHEMICAL ORP.
72. WYCO PIPELINE CO.
73. YOUNG REFINING CORP.

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